Fleming Fund Country Brief

SIERRA LEONE

Who we are

The Department of Health and Social Care (DHSC)'s Fleming Fund is a UK aid programme supporting up to 25 countries across Africa and Asia to tackle antimicrobial resistance (AMR), a leading public health threat across the world. The Fleming Fund invests in strengthening surveillance systems through a portfolio of country grants, regional grants, and fellowships managed by Mott MacDonald and global projects managed by DHSC partners.

Focusing on low- and middle-income countries (LMICs), as they bear the heaviest consequences of the spread of drug-resistant infections, the programme generates, shares, and uses robust and quality-assured data to support AMR strategies and interventions.

Supporting AMR data collection and analysis, through a One Health approach across human clinical, animal, and environmental sectors will help improve patient health, inform health policies, and warn of emerging threats.

Country context

Sierra Leone developed its first AMR National Strategic Plan (NASP) in October 2017, to cover the period 2018-2022. It was developed through the collective efforts of the Ministry of Health and Sanitation; the Ministry of Agriculture, Forestry and Food Security, and the Environmental Protection Agency of Sierra Leone.
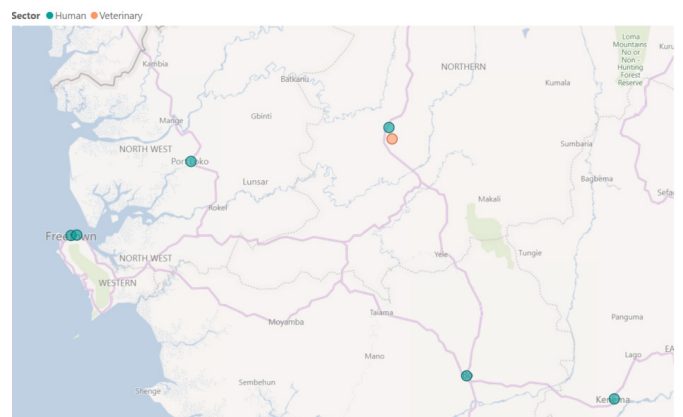
The NASP was guided by the 'One Health' approach and the National One Health Platform which was formed after the 2014-2016 Ebola Virus Disease outbreak. Its key objectives were:

- Establish an AMR governance structure.
- Improve AMR awareness and education.
- Strengthen laboratory and surveillance capacities.
- Reduce the incidence of infection through IPC.
- Optimise antimicrobial use in all sectors.
- Ensure sustainable investment through research and development.

In 2022, the National AMR Technical Working Group (TWG) began the process of reviewing the achievements of the first NASP and the development of a new NASP, which is expected to be finalised in early 2024.

More information about Sierra Leone and its work on AMR can be found on the Fleming Fund website: flemingfund.org/countries/sierra-leone/

Map of Sierra Leone showing types of labs supported by the Fleming Fund

Country Grant

Grantee: World Health Organisation (WHO)
Value: £2,318,288
Duration: Oct 2020 – March 2024

Country Grant

Grantee: Food and Agriculture Organisation (FAO)
Value: £919,758
Duration: Nov 2020 – Mar 2024

Country Grant

Grantee: International Procurement Agency (IPA)
Value: £870,609
Duration: Mar 2022 – Dec 2023

Regional Grants

Grantees: Technical University of Denmark (DTU), African Society for Laboratory Medicine (ASLM), International Vaccine Institute (IVI).
Value: £14,344,696
Duration: Nov 2018 - Nov 2023

Acting against drug resistance for a healthier world

Country Grant

Management Agent: Mott MacDonald
Grantees: World Health Organisation (WHO), Food and Agriculture Organisation (FAO), International Procurement Agency (IPA)

Strengthening One Health governance structure for AMR and AMU (antimicrobial use) surveillance in all One Health sectors.

Achievements - WHO

AMR governance structures developed including National One Health Coordination Committee, AMR-TWGs, and Sub-TWGs with defined memberships formalised and organogram established.

AMC/AMU Surveillance Strategic plan (2021-2025) for Human Health (HH) developed and validated, supported by costed implementation plan (2021-2013).

One Health Secretariat for AMR Surveillance established within MoHS and capacities strengthened.

AMR Focal Persons appointed for HH, animal health (AH), and the environment and capacity built for AMR surveillance.

12 members including Focal Persons established as part of National Coordinating Centre to provide oversight on AMR surveillance in-country.

8 healthcare training institutions (**5** universities and **3** Midwifery schools) reviewed for integration of curricula modules on AMR surveillance.

55 AMR curriculum assessment findings disseminated to **55** stakeholders from health educational instructions, AMR TWG members, and implementing partners. A workplan developed for concrete integration of standalone AMR curriculum in each university and midwifery school.

Sierra Leone registered on GLASS, pending data generation. Laboratory Quality Management System baseline assessments for designated bacteriology laboratories carried out, and improvement plans developed and approved by MoHS to support attainment of requisite quality systems for reliable bacteriology testing.

4 laboratories (CPHRL, Ola During Childrens' Hospital, Connaught Hospital, and Makeni Hospital) assessed using SLIPTA checklist.

20 laboratories - biosafety audits conducted with continuous technical support to develop documentation and provide guidance on biosafety and quality improvement plan.

Training conducted for ODCH, Connaught and Makeni staff on bacterial culture and identification, antimicrobial susceptibility testing (AST), and writing of laboratory Standard Operating Procedures.

24
phlebotomists nominated and trained to serve as AMR champions at each of **3** surveillance sites to ensure timely, safe, and quality specimen collection for AMR testing.

29
nursing and laboratory staff working in the three AMR surveillance sites were trained on Phlebotomy. Surveillance on basic bacteriology techniques was provided for staff of the Central Veterinary Lab (CVL).

54
key personnel trained on WHO Point Prevalence Survey (PPS) methodology and collected data from **1,237** patients in **159** wards in **28** hospitals.

CVL staff supported for testing field samples and generating AMR data for first time in the poultry sector.

28
hospitals - PPSs on antimicrobial use conducted, including those supported by FF, using WHO PPS methodology with electronic data entered to WHO platform.

Achievements - FAO

National AMR Surveillance Strategy for Animal Health has been developed, validated, and costed by One Health TWG and line ministries, Departments, and Agencies of the GoSL.

Situation Analysis of AMU conducted in the AH sector.

AMC and AMU Surveillance Strategic Plan (2021-2025) developed and validated.

Collaborated with WHO in development of AMR Surveillance Strategy and implementation plan ensuring One Health approach.

Organised training on basic bacteriology techniques for staff of CVL to increase bacteriology services. Training covered culture, isolation and identification of bacteria targeted for the surveillance pilot (*E. coli and Salmonella*).

Supported Ministry of Agriculture, Food and Sanitation (MAFS) to organise training of field and laboratory staff in selected surveillance areas on AMU collection, sample collection, packaging, and transport.

Conducted assessment of capacity of CVL conducted using Fleming Fund Laboratory Assessment Tool, leading to generation of equipment-need summary for laboratory and highlighted priority gaps in infrastructure and human resource.

CVL staff conducted testing of field samples and generated data on AMR for first time in poultry.

Collaborated with WHO and supported development of One Health governance structures, including development of organogram and terms of reference for national AMR TWG and three sub-TWG for Education, AMR Stewardship and Surveillance and Laboratories.

AH Surveillance Strategy developed received broad acceptance and validated by One Health TWG and other key government stakeholders.

Concluded development of situational analysis of AMR/AMU in food and agriculture sectors in Sierra Leone and hosted validation workshop with participants from key sector Ministries: Agriculture and Forestry, Fisheries and Marine Resources and Environment, and other key One Health stakeholders from public and private sector.

Worked with AMR TWG to develop road map for AMR in Sierra Leone in 2022 to guide and align AMR stakeholder activity in-country.

Draft AMR Surveillance Strategy and Operational Plan for AH completed.

Draft protocol for AMR surveillance in piggery sub-sector developed.

Final report on AMR active surveillance pilot in poultry prepared and submitted.

Achievements - IPA

3

FF-supported laboratories in Sierra Leone renovated (ODCH, Connaught, and Makeni) with investment of £123,702.

6

laboratories' equipment centrally procured to value of £194,984 (1 Maldi TOF system, 2 AST platforms, and 3 blood culture systems). Local procurement of equipment to value of £201,661.39 .

Regional Grants

Management Agent: Mott MacDonald
Grantees: Technical University of Denmark (DTU), African Society for Laboratory Medicine (ASLM), and International Vaccine Institute (IVI).

Achievements

MAAP

Collection of Historical Data, ASLM
Value: £3,340,705*
Duration: Nov 2018 – Nov 2023

Supports the collection and analysis of historical AMR data across key Fleming Fund countries to provide preliminary information for policymaking.

Relevant and shared data analysed to provide national stakeholders with information on current surveillance capacity, data availability, resistance epidemiology, and AMC patterns.

Working with local stakeholders to identify, assess, prioritise, and collate existing data on AMR, AMC, and AMU. Historical AMR/AMU data was collected for the period 2016 – 2019.

4,333 total culture sample results collected from seven facilities in Sierra Leone, two of which (ODCH and Connaught) are FF-supported sites. Pharmacy data collection was successfully conducted in **14** targeted pharmacies.

Country Reports shared with country stakeholders, along with country-specific recommendations for policymakers and healthcare providers on AMR/AMC surveillance.

EQuAFRICA

External Quality Assurance - Africa, ASLM
Value: £ 4,364,227.87*
Duration: Oct 2019 – Sep 2023

Supports the development of external quality assurance practices in laboratories around Africa which ensures confidence in laboratory testing results.

Supported development of national laboratory quality standards, policies, Proficiency Testing panels and National external quality assessment (EQA).

Sustained coordination with support of the subject matters experts in Sierra Leone to develop national laboratory quality policy and strategic plan.

Developed and conducted courses on epidemiology and microbiology for skilled and expert employees.

21 participants , nine microbiologists (six HH, three AH) and 12 epidemiologists (eight HH, four AH) took part in training.

Regional Grants (continued)

Management Agent: Mott MacDonald
Grantees: African Society for Laboratory Medicine (ASLM), Technical University of Denmark (DTU), International Procurement Agency (IPA), Ending Pandemics

Achievements

SEQAFRICA
Whole Genome Sequencing, DTU
Value: £6,766,632.33*
Duration: May 2019 – Sept 2023

Supports development of regional capacity for Whole Genome Sequencing (WGS) and bioinformatics.

200

participants trained by SEQAFRICA in WGS and bioinformatics for bacterial AMR surveillance and SARS-CoV-2 surveillance.

5

regional sequencing centres reviewing and accepting isolates/samples for WGS on rolling basis across 18 African countries.

Generated over 30,000 genomes (~20,000 bacterial genomes and over 10,000 SARS-CoV-2 genomes), more than 22,000 are published in public or semi-public databases (ENA, Enterobase, GISAID, NCBI).

RADAAR
Value: £2,715,217*
Duration: Sep 2019 – Nov 2023

Supporting data sharing for global AMR planning and advocacy to provide policymakers with evidence for robust, data-based policy recommendations.

4

regional analyses developed, including all Fleming Fund priority countries, to identify data sharing bottlenecks.

Delivered both regional data and policy workshops to review existing material and visualisation approaches, developing plans to improve data sharing and analysis.

Strategic Alignment Grants

Management Agent: Mott MacDonald

Achievements

SPARC
Grantee: Commonwealth Pharmacists Association
Value: £1,152,946*
Duration: Dec 2021 – Feb 2024

Assists with AMS and AMU surveillance using surveillance data to improve prescribing practices.

Worked to improve surveillance and prescribing of antimicrobial medicines in 22 FF priority countries, including Sierra Leone, through the roll-out and training of the Prescribing Companion app and provided support to conduct AMU PPS surveys in selected sites.

CPA networks established in FF-supported countries to provide HH and AH guidelines for data sharing – uploading government-owned documents to the app.

WHONET
Grantee: Brigham and Women's Hospital
Value: £889,044*
Duration: Apr 2022 – Dec 2023

Provides training and technical support to use the WHONET free desktop application for managing and analysing microbiology laboratory data, with a focus on AMR surveillance.

Ran centralised training (both on-site and remotely) and identifying gaps for specialist training in Fleming Fund-supported countries.

Developed training materials and providing ongoing technical support to software users.

Supported development of modules, including online data entry and integration platform compatible with DHIS-2, and provided scientific guidance for breakpoints (aiding pathogen AST) interpretation and report generation for AMR analysis.

*(across multiple countries, including Sierra Leone)

The Fleming Fund supports a range of additional projects delivered at national, regional, and global levels to support the generation, sharing, and use of high-quality AMR data. These all align closely with the country and regional grants and fellowships portfolio and support further achievement of the Fleming Fund objectives. A full list of global grants is available on the **Fleming Fund website**.

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